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10/578,620	01/26/2007	Peter James Harbour	HARB3001/REF	3713
23364 7590 02/17/2010 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176				
EXAMINER				
HAILEY, PATRICIA L				
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1793				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/578,620

**Applicant(s)**

HARBOR ET AL.

**Examiner**

PATRICIA L. HAILEY

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 November 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 27-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27-42 and 44-51 is/are rejected.
- 7) ☒ Claim(s) 43 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS-08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Applicants' remarks and amendments, filed on November 23, 2009, have been carefully considered.

Applicants' listing of claims begin with new claim 26, following the cancellation of claims 1-25. Applicants originally filed 26 claims. The Examiner assumes that originally filed claims 1-26 were intended to be canceled. Therefore, newly filed claims 26-50 have been re-numbered as claims 27-51.

### ***Claim Objections***

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 26-50 have been renumbered claims 27-51.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicants' Priority Document was filed on May 8, 2006.

***Withdrawn Rejections***

The rejections of record stated in the previous Office Action have been withdrawn in view of Applicants' cancellation of claims 1-26.

***New Grounds of Rejection***

The following new Grounds of Rejection are being made in view of Applicants' addition of new claims 27-51, and in view of the Examiner's reconsideration of the cited references of record.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 102***

**3. Claims 29, 42, 45, 46, and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Bovarnick et al. (U. S. Patent No. 3,305,349).**

Bovarnick et al. teach the formation of composite materials, in which a solution of two or more metal salts are formed and simultaneously heated to dehydrate and decompose the salts to oxides. The product of the simultaneous dehydrating and decomposing may be partially or completely reduced (claims 29 and 48). See col. 3, lines 11-33 of Bovarnick et al.

Regarding claims 42, 45, and 46, Bovarnick et al. teach that solutions of metal nitrates, sulfates, or chlorides are formed, and that solutions in strong bases such as

ammonium hydroxides may also be employed. See col. 4, lines 63-74 of Bovarnick et al.

In view of these teachings, Bovarnick et al. anticipate claims 29, 42, 45, 46, and 48.

**4. Claims 29-35, 38, 39, 42, and 44-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Immel et al. (U. S. Patent No. 5,552,362).**

Immel et al. teach the formation of metal oxide/hydroxides, wherein salt solutions of said metals are co-precipitated onto an inorganic support using compounds such as an alkali metal hydroxide or ammonia, optionally followed by washing of the soluble components with water, followed by a drying phase and a complete heating phase, during which the compounds applied are converted into oxides/hydroxides which adhere to the inorganic support (claims 29-35, 38, 39, and 44). See col. 3, line 51 to col. 4, line 9 of Immel et al.

Regarding claim 42, Immel et al. teach the employment of salts such as acetates, chlorides, nitrates, and sulfates; see col. 4, lines 2 and 3.

Regarding claims 45 and 46, the alkali metal hydroxide ("strong inorganic base") can be sodium hydroxide. See Example 1 of Immel et al.

In view of these teachings, Immel et al. anticipate claims 29-35, 38, 39, 42, and 44-46.

***Claim Rejections - 35 USC § 103***

**5. Claims 27, 28, and 49-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wieserman et al. (U. S. Patent No. 4,994,429).**

Wieserman et al. teach an active material comprising a metal oxide/hydroxide particle having chemically bonded to reactive sites on the surface thereof a substantially monomolecular layer of organic acid molecules, each organic molecule comprising an unreacted acid group and a phosphorus-containing acid group chemically bonded to a reactive site on the metal oxide/hydroxide particle (col.2, lines 28-34; claims 27 and 28).

Further, regarding claim 27, Wieserman et al. teach that the metal oxide/hydroxide particle exhibits surface areas in the range of 0.1 to 600 m<sup>2</sup>/g and up to 1000 m<sup>2</sup>/g; see col. 6, lines 31-34 of Wieserman et al.

The active material is suitable for uses such as selective absorbing of toxic liquids or gases without absorbing water (“removing toxic components from an environment”, claim 49; “catalysing a chemical reaction”, claim 50); see col. 3, line 67 to col. 4, line 27 of Wieserman et al.

With respect to claim 51, it is considered that although this reference does not explicitly disclose the employment of Patentees’ active material in the manufacturing of a supercapacitor, Wieserman et al. does teach that the active material can be used for improving bonding between electrical insulation and a metal conductor (col. 4, lines 19-21). Thus, the skilled artisan would have been motivated by the teachings of

Wieserman et al. to incorporate an active material such as that taught by Wieserman et al. in a supercapacitor to improve bonding between layers of the supercapacitor.

Although Wieserman et al. do not explicitly disclose that the metal oxide/hydroxide “is precipitated by treatment of a metal salt with base in an aqueous medium”, as recited in claim 27, this claim limitation is a product-by-process limitation. As such, it has been held that:

“Any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show that the same is a process of making.” In re Brown, 173 U.S.P.Q. 685 and In re Fessmann, 180 U.S.P.Q. 324.

**6. Claims 36, 37, 40, 41, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Immel et al. (U. S. Patent No. 5,552,362).**

Immel et al. is relied upon for its teachings in the above 102(b) rejection of claims 29-35, 38, 39, 42, and 44-46.

Regarding claims 36 and 37, Immel et al. teach a drying step of from 80° to 130°C; see col. 3, lines 59-61. This temperature range overlaps Applicants’ claimed range of “100°C to 110°C”.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping

portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness. In re Malagari, 182 U.S.P.Q. 549.

Regarding claims 40 and 41, it would be obvious to the skilled artisan that the metal oxide/hydroxides of Immel et al. would exhibit mesoporous areas comparable to that instantly claimed, absent the showing of convincing evidence to the contrary, given that Immel et al. teach a process reading upon that recited in claims 31 and 32 (from which claims 40 and 41 respectively depend).

Regarding claim 47, it would have been obvious to the skilled artisan to employ an amount of base (sodium hydroxide) such as that disclosed in Immel et al. (e.g., Example 1) to obtain a pH suitable for precipitation, such as that instantly claimed.

### ***Response to Arguments***

In response to Applicants' arguments that the "Official Action appears to have completely ignored the mesoporous area limitations which appear in the claims", the Examiner respectfully submits that said limitations appear in only claims 27, 40, and 41. These claims, and their limitations, have been addressed in the above rejection, as well as in the previous Office Action.

Applicants have not convincingly shown that the oxide/hydroxide materials of the cited references of record do not exhibit mesoporous areas comparable to that instantly claimed.

In response to Applicants' arguments that Immel et al. disclose "nothing...that would anticipate or suggest that the resulting product would have the mesoporous

areas as claimed in the present claims”, the Examiner respectfully submits that Immel et al. was applied against Applicants’ claims 29-42 and 44-47, which are drawn to a process. Of these claims, only claims 40 and 41, which depend from the method of claims 31 and 32, which, in turn, depend from method claim 29, refer to mesoporous areas. Because Immel et al., as set forth in the above rejection, read upon the *method* recited in claims 29-39, 42, and 44-47, it would necessarily follow that any product produced by the method of Immel et al. would exhibit mesoporous areas comparable to that instantly claimed, absent the showing of convincing evidence to the contrary. Moreover, the washing disclosed by Immel et al. is optional (col. 3, line 67); Immel et al. teach impregnating or spraying (or co-precipitating) salt solutions onto a support, which is dried and heated (col. 3, lines 51-63). The drying and heating steps disclosed in Immel et al. are considered equivalent to Applicants’ “removal of water from the aqueous medium via evaporation prior to salt removal from the solid residue”.

The same applies to Bovarnick et al., which was applied against claims 29, 42, 45, 46, and 48, which do not recite any limitations regarding mesoporous areas.

Applicant’s arguments amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

For these reasons, Applicants’ arguments have been considered, but are not persuasive.

***Allowable Subject Matter***

7. Claim 43 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter:

None of the cited references of record teach or suggest the limitations of claim 43 regarding the treatment of the metal salt with an oxidizing agent.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing

date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICIA L. HAILEY whose telephone number is (571)272-1369. The examiner can normally be reached on Mondays-Fridays, from 7:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Melvin C. Mayes, can be reached on (571) 272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PATRICIA L. HAILEY/  
Primary Examiner, Art Unit 1793  
February 9, 2010